

## REMARKS

Applicant respectfully requests reconsideration of this application as amended. Claims 1-69 remain in the application. Claims 1, 9-13, 15-17, 21, 25-26, 34, 46, 54, 55, 57 and 64 have been amended. Claim 62 has been canceled. No claims have been added.

### **Claim Objections**

Claim 21 has been amended to correct for the insufficient antecedent basis as pointed out in the Office Action dated 8/9/05.

The word “differ” has been replaced by “are not a same” in Claims 25, 26, 54, and 55 for clarity, as suggested in the Office Action dated 8/9/05.

Claims 1, 9-13, 15-17, 21, 34, 46, and 64 have been amended to clarify the term “connection configuration.”

### **General Comment to Last Office Action**

The Office Action take a broad interpretation of “connection configuration” and “concatenation”, broader than put forward by the Application and Applicant’s last response. Applicant has amended the claims to include limitations Applicant respectfully submits were inherently already present in the use of these terms.

**Claims 1-23, 25-31, 33-61 and 63-69 are rejected under 35 U.S.C. 102(b) as being anticipated by Ogura (US005517489A) (Hereinafter “Ogura”).**

### Independent Claim 1

Amended independent claim 1 includes the limitation “...wherein a given connection configuration is to identify one or more concatenations of two or more components within the protecting channels, where a given concatenation of components”

is to collectively carry data for a single circuit at a greater bandwidth than that of data carried by a single component.”

Ogura discloses a synchronous digital hierarchy 2-fiber ring. The disclosure contains a feature having a transmitting and receiving control sections that each allocates different numbers of channels to the working and protecting respectively (Abstract, Col. 7, lines 27-30). Ogura merely discloses a different number of channels in the working channel as compared to that in the protecting channels. Ogura fails to anticipate the term “connection configuration” as defined in the amended claim as “one or more concatenations of two or more components ... where a given concatenation of components is to collectively carry data for a single circuit at a greater bandwidth than that of data carried by a single component.” The concept of concatenations of components within its working or protecting channels is not described in the disclosure. Thus, Ogura fails to anticipate each and every element in claim as amended.

Applicant submits that it is well known in the art that “concatenate” is defined as the linking together of various data structures, for example two band-widths, joined to form a single bandwidth (<http://www.iec.org/online/tutorials/sonet/glossary.html>). Similarly, a concatenated VT is a virtual tributary ( $VT \times N_c$ ) which is composed of  $N \times VT$ s combined. Its payload is transported as a single entity rather than separate signals. Thus, concatenation is not merely defined as a group of channels, but further requires the concatenated channels to act in unity as one bandwidth to carry the same data stream. By way of example and not limitation, Figure 3B-3E shows different concatenation configurations on different spans without mirroring; and by way of specific example, the concatenation in 3B does not include all 6 working channels.

Furthermore, Applicant’s claim 1 requires a “traffic handler to reprogram, responsive to protection switches and un-switches, a connection configuration on the protecting channels ...” The term “reprogram” targets the “connection configuration,” and specifically refers to the re-configuration of “concatenations of components,” in the

protecting channels, directly “responsive to protection switches and un-switches”.

Support for this aspect of the invention by way of illustration but not limitation, can be found in paragraph 50. The reprogramming of “connection configuration” and re-routing of data traffic from the working channels of the failed span to the protecting channels of their non-failed span is different, as described in paragraph 51.

#### Independent Claim 9

Amended claim 9 includes “... storing in a first set of structures concatenation configurations for the working and protecting channels programmed on ... ports coupled to the sub-spans of the first and second spans; and storing in a second set of structures the concatenation configurations programmed on the working channels of those of said plurality of spans not directly connected to said node” (emphasis added). Ogura does not teach concatenation configurations or operations to store concatenation configurations of working and protecting channels programmed on ports coupled to the subspans of the node, as well as those of working channels not directly connected the node.

#### Independent Claim 17

Amended independent claim 17 includes the limitation “... different connection configurations capable to identify different concatenations each to carry data for a single circuit with a bandwidth greater than that of data carried by a single component of the protecting channels.” Ogura fails to teach “means for providing different connection configurations ... responsive to protection switches and un-switches ...” where different connection configurations are different concatenation configurations.

#### Independent Claim 21

Similar to amended claim 1, amended independent claim 21 includes the term “connection configuration” to mean “... one or more different concatenations of two or

more components...” Thus, the term “connection configuration” in amended claim 21 where “multiplexing ring transport protocol ... wherein a first connection configuration programmed on a first of said sets of channels is not the same as a second connection configuration programmed on a second of said sets of channels ... each of the concatenations ... carries data for a single circuit ...” is not anticipated by the prior art.

#### Independent Claim 34

Similar to amended claim 1, amended independent claim 34 includes the term “connection configuration” to identify “concatenations of two or more components ... where each of the concatenations of components carries data for a single circuit.”

Amended claim 34 requires “... traffic handler ... to reprogram ... the connection configurations of the protecting channels ... responsive to protection switches and un-switches”

#### Independent Claim 46

Similar to amended claim 1, amended independent claim 46 includes the term “connection configuration” which identifies “a combination of a single component and a concatenation of two or more components or a combination of multiple concatenations of two or more components, where each concatenation carries data for a different single circuit.” Amended claim 46 requires “... responsive to said protection switch, programming ... ports that are coupled to operable sub-spans so that their protection channels have programmed thereon the connection configuration ...”

#### Independent Claim 57

Applicant has incorporated claim 62 into claim 57. Claim 62 was objected to as being dependent upon a rejected base claim and is now rewritten in an independent form including all of the limitations of the base claim 57.

#### Independent Claim 64

Similar to amended claim 46, amended independent claim 64 includes the term “connection configuration” which identifies “a combination of a single component and a concatenation of two or more components or a combination of multiple concatenations of two or more components, where each concatenation carries data for a different single circuit.” Amended claim 64 requires “... responsive to a protection switch, reprogramming ... ports ... protection channels have programmed thereon connection configuration of the working channels programmed on the opposite direction ...”

#### Remaining Dependent Claims Rejected as part of this Rejection

The remaining claims rejected in this section are either directly or indirectly dependent from amended independent claims as discussed above. For at least this reason, Applicant respectfully submits that this rejection has been overcome.

**Claim 17 is rejected under 35 U.S.C. 102(e) as being anticipated by Hermann (US006606667B1) (Hereinafter “Hermann”).**

#### Independent Claim 17

Amended independent claim 17 includes the limitation “... means for providing different connection configurations...” and “...wherein said different connection configurations capable to identify different concatenations each to carry data for a single circuit with a bandwidth greater than that of data carried by a single component of the protecting channels.”

Hermann discloses a network architecture to provide for an increase in the working/protecting bandwidth ratio in the transport networks by providing a plurality of arm networks between two nodes of interest. Hermann describes a method to balance and

distribute the bandwidths across working and protecting channels. As interpreted, Hermann's disclosure can allocate the bandwidth or number of channels used for data traffic in the working and protecting channels. However, Herman fails to specifically describe the means for providing different "connection configurations" which identifies "different concatenations each to carry data for a single circuit" with a greater bandwidth than a single component. In fact, Hermann does not describe concatenations of channels in the disclosure. Therefore, Applicant respectfully submits that Herman fails to anticipate the claim as amended.

**Claims 1-5, 7, 17-23, 25-31, 33-34, 43, 46-48, 50, 52-61, 63-66, 68-69 are rejected under 35 U.S.C. 102(b) as being anticipated by Takatori et al (U.S. Patent No. 5,600,631) (hereinafter "Takatori").**

#### Independent Claim 1

Amended independent claim 1 includes the limitation "... wherein a given connection configuration is to identify one or more concatenations of two or more components within the protecting channels, where a given concatenation of components is to collectively carry data for a single circuit at a greater bandwidth than that of data carried by a single component." (Emphasis added)

Takatori describes a ring switch for changing connections in response to protection switches and un-switches (Col. 6 lines 39-66). Takatori does not teach or describe the concept of programming (or reprogramming) of a "connection configuration" or the concept of "concatenations" in response to protection switches and un-switches. On the contrary, as described above in Ogura, Applicant's specification describes what are concatenations (paragraph 9), how they are structured in the prior art (paragraph 10), and how they are programmed in the prior art (paragraph 11). Applicant's specification also describes by way of illustration but not limitation, various exemplary

implementations of concatenation in connection configurations such as different concatenation configurations on a per sub-span basis without mirroring (paragraph 40), different concatenation configurations on a per sub-span basis with mirroring (paragraph 41), different concatenation configuration on a per span basis without mirroring (paragraph 45 and Figure 3A). Moreover, Applicant's specification describes by way of illustration and not limitation the reprogramming of connection configurations on the protecting channels in response to a protection switch in paragraph 48 and distinguishes the difference between reprogramming of connection configuration from node switching of traffic from the working channels of the failed span to the protecting channels of their non-failed span in paragraph 50. Therefore, Applicant respectfully submits that claim 1 as amended is not anticipated by Takatori.

#### Independent Claim 17

Amended independent claim 17 includes the limitation "... different connection configurations capable to identify different concatenations each to carry data for a single circuit with a bandwidth greater than that of data carried by a single component of the protecting channels." Takatori fails to teach "means for providing different connection configurations ... responsive to protection switches and un-switches ..." where different connection configurations are different concatenation configurations.

#### Independent Claim 21

Similar to amended claim 1, amended independent claim 21 includes the term "connection configuration" to mean "... one or more different concatenations of two or more components..." Thus, the term "connection configuration" in amended claim 21 where "multiplexing ring transport protocol ... wherein a first connection configuration programmed on a first of said sets of channels is not the same as a second connection

configuration programmed on a second of said sets of channels ... each of the concatenations ... carries data for a single circuit ...” is not anticipated by the prior art.

#### Independent Claim 34

Similar to amended claim 1, amended independent claim 34 includes the term “connection configuration” to identify “concatenations of two or more components ... where each of the concatenations of components carries data for a single circuit.”

Amended claim 34 requires “... traffic handler ... to reprogram ... the connection configurations of the protecting channels ... responsive to protection switches and un-switches.” The amended claim is not anticipated by Takatori.

#### Independent Claim 46

Similar to amended claim 1, amended independent claim 46 includes the term “connection configuration” which identifies “a combination of a single component and a concatenation of two or more components or a combination of multiple concatenations of two or more components, where each concatenation carries data for a different single circuit.” Amended claim 46 requires “... responsive to said protection switch, programming ... ports that are coupled to operable sub-spans so that their protection channels have programmed thereon the connection configuration ...” and is not anticipated by Takatori.

#### Independent Claim 57

Applicant has incorporated claim 62 into claim 57. Claim 62 was objected to as being dependent upon a rejected base claim and is now rewritten in an independent form including all of the limitations of the base claim 57.

#### Independent Claim 64



Similar to amended claim 46, amended independent claim 64 includes the term “connection configuration” which identifies “a combination of a single component and a concatenation of two or more components or a combination of multiple concatenations of two or more components, where each concatenation carries data for a different single circuit.” Amended claim 64 requires “... responsive to a protection switch, reprogramming ... ports ... protection channels have programmed thereon connection configuration of the working channels programmed on the opposite direction ...” and is not anticipated by Takatori.

#### Remaining Dependent Claims Rejected as part of this Rejection

The remaining claims rejected in this section are either directly or indirectly dependent from an amended independent claim as discussed above. For at least this reason, Applicant respectfully submits that this rejection has been overcome.

**Claims 6-9, 11-16, 42, 44 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takatori in view of Lu (U.S. Patent No. 5,815,490)**

#### Claims 6-8

Claims 6-8 depend from amended independent claim 1 and include the limitation contained therein. Lu does not teach or suggest the limitation of “...concatenation of components to collectively carry data for a single circuit ...” and thus fails to cure the deficiency of Takatori. For at least this reason, Applicant respectfully submits that they are patentable over Takatori and Lu.

#### Independent Claim 9

Amended claim 9 requires the limitation “... storing in a first set of structures concatenation configurations for the working and protecting channels programmed on ...

ports coupled to the sub-spans of the first and second spans; and storing in a second set of structures the concatenation configurations programmed on the working channels of those of said plurality of spans not directly connected to said node” which is not suggested by the combination of Lu and Takatori and thus distinguishes the claim from the prior art combination.

#### Claims 42, 44, 45

Claims 42, 44 and 45 depend from amended claim 34 and include the limitation contained therein. Lu fails to teach or suggest “... concatenation of components carries data for a single circuit.” For at least this reason, Applicant respectfully submits that they are patentable over Takatori and Lu.

#### **Allowable Subject Matter**

Applicant thanks the examiner for indicating allowability of claims 24 and 32. In the case of a final office action, Applicant will consider moving the limitations of the objected to dependent claims into the independent claims (not by way of agreeing with the rejections, but by way of allowing the application to issue with the intention of considering seeking the existing independent claims in a continuation.)

#### CONCLUSION

Applicant respectfully submits that the rejections have been overcome by the remarks, and that the claims are in condition for allowance. Accordingly, Applicant respectfully requests the rejections be withdrawn and the claims be allowed.

*Invitation for a telephone interview*

The Examiner is invited to call the undersigned at 408-720-8300 if there remains any issue with allowance of this case.

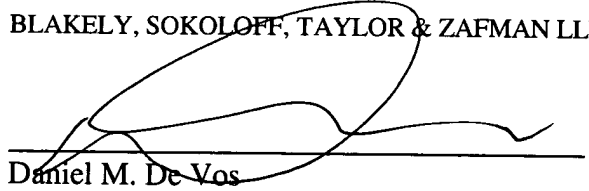
*Charge our Deposit Account*

Please charge any shortage to our Deposit Account No. 02-2666.

Respectfully submitted,

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